

DOT Monitoring Program for Hot Mix Asphalt Technician

The Certified HMA Technician's Guide provides an overview of the duties and responsibilities of HMA Technicians when Quality Management – Asphalt (QM-A) applies. It is intended to provide a general outline of inspection activities. IT IS ESSENTIAL THAT ANYONE USING THIS GUIDE REFER TO THE SPECIFICATIONS, MATERIALS IMs, AND CONSTRUCTION MANUAL SECTIONS FOR A COMPLETE DESCRIPTION OF REQUIREMENTS.

Before production begins, the contractor's certified HMA technician and the Engineer should discuss these duties, documentation, sampling and testing plans to ensure compliance with current specifications and IM 214.213. Any noncompliance or work quality deficiency shall be immediately reported to the contractor's superintendent and the resident construction engineer. The contractor shall be required to take corrective action. The monitoring requirements are minimum and should be increased if deficiencies occur until the problems are resolved. Construction and Materials personnel, upon mutual agreement, may shift monitoring responsibilities between each other to accommodate problems with personnel availability through greater schedule flexibility.

Certified HMA Technician

Minimum Monitoring Requirement

References

Stockpiles

Observe construction of stockpiles to prevent segregation, contamination, and intermingling.

* Inspect before construction begins and randomly during plant monitor visits.

Specification 2303
I.M. 508

Plant Erection

Inspect material bin foundations.
Assure sampling locations are safe and convenient.

~~* Inspect prior to calibration.~~
~~Visually inspect for safety concerns.~~

Article 2001.06
Article 1107.07

Plant Equipment

Check interlocks on aggregate feeders and asphalt binder delivery systems, screens for removal of oversize material, asphalt binder storage tank, tank stick, and general condition of all plant equipment.

~~* Inspect all plant and testing equipment prior to or at the time of calibration (including laboratory trailer and QM-A equipment).~~
~~* Check if laboratory qualification is current. If not current, perform lab qualification inspection as per I.M. 208.~~

Article 2001.22
Specifications 2303,
Specification 2520 and
Specification 2521
I.M. 508, App. A
I.M. 208

Perform check weighing and verification weighing as per prescribed frequency.

Monitor the first day and once per week thereafter.
~~Check truck tare weights the first day a truck is used on the project when platform scales are used.~~
~~Witness tare weighing randomly.~~

Const. Man. 3.50
Article 2001.07
I.M. 508

* To be performed by District Materials.

DOT Monitoring Program for Hot Mix Asphalt Technician (Continued)

Certified HMA Technician**Minimum Monitoring Requirement****References****Plant Calibration**

Notify District Materials prior to plant calibration.

Observe calibration and obtain a copy of all calibration data.

Obtain a copy of job mix formula and "Proportions and Production Limits" (Form 820955).

Check cold feed bins for method of adjustment.

Discuss mix designs and plant controls with District Materials personnel.

* Observe calibration when possible.

I.M. 508

* Review calibration data and job mix formula.

* Inspect method for securing the bin gate settings.

* Participate in discussion.

Plant Sampling and Testing

Obtain 3 aggregate samples per lot, split only the sample(s) to be tested, determine and record process control gradation. Forward split samples to the District Materials Laboratory with Form 820193. Determine moisture content of all aggregates including RAP.

Witness sampling and splitting of at least 1 of the first 3 process samples of taken for each mix design and a minimum of 10% of the remaining samples.

* Perform acceptance gradation correlation and assurance testing frequency as per I.M. 204.
Monitor for correlation.

Const. Man. 3.21
Const. Man. 3.22
Specification 2534
I.M. 508, I.M. 216
I.M. 204

Obtain asphalt binder samples and forward to the District Materials Laboratory.

* Observe sampling at calibration and randomly during monitor visits.

I.M. 204

Monitor conditions of density cores and core thickness.
Determine and record density core test results.

Identify and mark random core locations daily.
Observe core cutting, transport to field laboratory, witness testing and record core densities and Q.I. for at least two days of production each week, including the first day for each mix type. Issue noncompliance if necessary.

* Transportation Center District Materials Laboratory to test first density set from first day of production and one additional set per week at 10% randomly thereafter.

Specification 2303
I.M. 320
I.M. 321

I.M. 204

* To be performed by District Materials.

DOT Monitoring Program for Hot Mix Asphalt Technician (Continued)

Certified HMA Technician**Minimum Monitoring Requirement****References****Documentation**

Prepare daily plant report (Form 800241); FAX a copy to the DME.

Review entries the first day and weekly thereafter.

I.M. 508

Document all checks, tests, and quantities in field book in format provided by residency.

Review entries the first day and weekly thereafter.

Determine and calculate hot mix asphalt pay quantities daily.

Review entries the first day and weekly thereafter.

I.M. 509

Maintain and monitor control charts.

* Review randomly during monitor visits.

I.M. 508

Check for approved sources and certifications for all materials (including material transferred from other projects) and document deliveries.

* Check sources at time of calibration and monitor any changes.

Assure total certified quantities are sufficient for tons produced.

Check once per week. Review entries the first day and weekly thereafter.

Maintain file of all certified material tickets, worksheets, and forms submitted to be made available to the agency upon request.

Obtain file of plant reports, correlation summary sheets, and control charts at the end of project.

Specification 2521

Maintain control charts and data sheets. Document all mix control changes. Document correlation results. Fax a copy of the summary sheet to the DME daily.

* Monitor summary sheet daily. Obtain copies of the control charts and summary sheets at the end of the project.

Specification 2303

FAX a copy of the Summary sheet to the DME daily.

* Obtain copies of control charts and summary sheets at the end of the project.

Specification 2303

Mix Control

Monitor coating of aggregates and mixing time.

* Observe production during monitor visits.
Observe each day of production by grade inspector.

Specification 2303
I.M. 508

Monitor and record air, asphalt binder, and mix temperatures on 2-hour intervals.

* Check randomly during monitor visits.

Specification 2303

Monitor truck loading procedures, amount of mix maintained in silo and operation of hopper/silo gates to avoid segregation.

* Observe during monitor visits.

Specification 2303
I.M. 508

* To be performed by District Materials.

DOT Monitoring Program for Hot Mix Asphalt Technician (Continued)

Certified HMA Technician

Check aggregate proportions, interlocks, and cold feed bin gate settings daily.

Inspect trucks for proper/improper use of cleaning fluids.

Prepare boxes and Form 820193 (Samples Submitted) and send to road for hot samples.

Asphalt Binder DeliveryTank Stick:

Determine quantities on hand and calculate asphalt binder added by tank stick or weighing.
Compare with brodie meter daily.

In-Line Flow Meter:

Determine quantity by meter reading. Obtain a 4-hour tank stick measurement weekly and furnish calculated quantity to plant monitor.

HMA Mixture Sampling

Responsible for proper and random sampling of hot HMA mixture behind paver at the specified frequency.

~~Sampling frequency in accordance with Specification 2303.~~

Minimum Monitoring Requirement

* Monitor ~~at calibration and randomly~~ during monitor visits and document changes.

Monitor ~~at~~ randomly.

Monitor the first day and once per week ~~at~~ randomly thereafter.

Witness the 4-hour tank stick measurement and compare the calculated outage with the 4-hour metered quantity.

Monitor daily by plant monitor or grade inspector.

* To be performed by District Materials.

References

I.M. 508
I.M. 511

Article 2001.01

I.M. 509
Specification 2303

I.M. 322
Specification 2303